DOCUMENT RESUME

ED 278 635 SP 028 524

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TITLE Professional Practices for the Professional Teacher--Implications for Pre-Service/Inservice Programs.
PUB DATE [87]
NOTE 11p.
PUB TYPE Information Analyses (070) -- Viewpoints (120)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Educational Research; Elementary Secondary Education; Higher Education; Inservice Teacher Education; Preservice Teacher Education; *Professional Recognition; *Program Improvement; *Research Utilization; *Teacher Education Programs; Theory Practice Relationship

ABSTRACT

Teaching can acquire professional status through teacher preparation agencies implementing programs oriented to the hypothetical-deductive model based on existing research. Teacher preparation programs must orient both inservice and preservice teachers appropriately to educational research and its transfer to practice. Many research studies exist which can be used by teachers, not as a recipe for eliminating every negative classroom situation, but as a backdrop of strategies, systems, and curricula which have demonstrated efficacy. Use of such research should be taught in methods classes. Teacher preparation must be based, in every respect possible, on research indicators. A two-page reference list concludes the document. (CB)

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ED278635

Professional Practices for the Professional Teacher - Implications for Pre-service/Inservice Programs

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Unrest and turmoil seem to be the hallmark of present-day teacher preparation programs. During the past half decade, public education itself has come under criticism either directly or through inference with the focus on the classroom teachers and the institutions responsible for their preparation. Schools and colleges of education are severely criticized for the quality of teachers they produce. Education courses are skeptically viewed, often with disdain. The chairman of the National Commission of Reform of Secondary Education lamented "Nationally, colleges of education have failed to deal with reality in their teacher-training programs. Teachers need to know how to start a class, how to get students involved, how to get feedback from students, and how to move from one issue to another. These items are hardly ever mentioned." (Brown, 1984, p. 92).

The certification requirements of states are generally viewed as meaningless hurdles which can be surmounted through persistence and payment for course credit. A 1985 Carnegie data-based report confirmed the popular view that state teacher certification requirements discourage potential candidates through face validity rather than stringency (Feistritzer, 1985). Teacher-shortage problems may tempt state governments to be influenced by public criticism to short-circuit teacher

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preparation standards.

State governments have attempted to impose stricter requirements in favor of subject-matter courses and at the expense of education courses. New Jersey recently passed a law providing for minimum certification with a baccalaureate degree, one year of supervised practical classroom experience and successful completion of the NTE examination. One may be certified to teach without ever taking an education course!

The education profession itself is divided in what it should be. Its behavior indicators range from the professional, to semi-professional, to that of labor unions (Massanari, et al, 1978).

The common threads of the recognized professions such as law and medicine seem to be that practitioners are intimately familiar with the current literature in the field and are trained in "scientific processes" which have a high probability of demonstrated success. The question in a malpractice suit seems not to be "Did a death result", but rather "Did the practitioner employ recognized acceptable practices?" Of essence is the face validity of the profession's pre-admission training.

Classroom teachers actually are not certain whether a cause and effect relationship exists between teaching and learning (Ashton, 1984; Perrone, 1985)! They are not sure they effect student learning. Teachers lack specific procedures for self-evaluation. Rather, they respond intuitively to problems or teaching challenges in the classroom. A passive role is typically assumed rather than a problem-solving inquiry approach

in evaluating their effectiveness (Perrone, 1985; Witkin, et al, 1977). In fact, evidence indicates teachers tend to be devoid of reflection about their specific teaching (Ashton, 1984; Lortie, 1975; Jackson, 1968). Evidence does not auger well for the professional preparation of teachers nor their confidence in established procedures.

The thesis of this paper is that teaching can only acquire professional status through teacher preparation agencies implementing programs oriented to the hypothetico-deductive model based on existing rese rch. Presently research findings have had little impact on classroom teaching (Holdzkom, ----; Good, 1979). Good (1979) argues that early school effective studies were too global and masked the effect of classroom practices, thus leading to skepticism of causality. A host of more recent research has amassed considerable evidence for the efficacy of educational studies.

Teacher preparation programs must orient both inservice and preservice teachers appropriately to educational research and its transfer to practice. Of essence is the teacher's belief system. Haigh and Katterns (1984) aptly make the case "--- no matter what empirical research says (or is unable to say) about effective teaching, a teacher's beliefs about <u>educative</u> teaching will usually determine how teaching occurs." Disparity commonly exists between the value and belief systems of the researcher and the classroom practitioner. Whereas the researcher is concerned about the "tightness" of procedures and the defense of a study, the practitioner is more concerned about application in the

classroom on Monday morning (Holdzkom, 198-).

A host of research studies exist which can serve, not as a recipe to ameliorate every classroom situation, but which allow the classroom teacher to examine each situation against the backdrop of strategies, systems and curricula which have demonstrated efficacy. Specific conditions can be set up which have a high probability of producing desired outcomes (Brophy, 1979; Good, 1979; Berliner, 1983; Haight & Katterns, 1984). The classroom teacher can better utilize research implications if trained (1) to develop a belief system in the efficacy of educational research, (2) in an awareness of existing research, (3) in interpretation of research and (4) to develop skills of self-evaluaton based on an evidence/inference model.

A common practice in teacher education programs is the requirement of both a general methods as well as a subject-matter methods course(s). Although a careful study of which teaching behaviors are truly subject-matter specific and which umbrella all aspects of teaching would prove useful in a research-based model, some delineation can presently be made. The case for overlap can most certainly be made in the majority of cases.

Tenets of research which appear to show promise irrespective of the subject matter orientation should be studies in the general methods course . For example, Good (1979) makes the observation "Teachers managerial abilities have been found to relate positively to student achievement in every process-product study conducted to date." Furthermore, evidence exists that teachers with managerial problems can be identified during the

first few days of school with their problems persisting throughout the school year if early correction does not take place (Evertson & Anderson, 1978; Anderson and Evertson (1978). Certainly the study of a single concept such as classroom management and mastery of this skill through simulation, role playing, and microteaching could easily fill a full semester of work. The implications of equipping a beginning teacher with skill and confidence in just this one classroom procedure can be enormous!

A mass of research in teaching exists which has been reported in subject-matter specific educational literature. Such information can readily serve as the focus for subject-matter specific teaching methods courses.

In the area of science education, several common threads of effective teaching procedures have been identified. For example, in a meta-analysis of 51 studies investigating instructional strategies, Boulanger (1981) identified the use of pre-instructional strategies as producing the most significant gains in student conceptual learning. Pre-instructional strategies include such processes as lesson orientation, set induction and the use of advanced organizers. Such teacher activities "prepare the student to learn" the material at hand through transfer of the familiar to the unfamiliar. The meta-analysis by Wise and Okey (1983) across 160 studies revealed twelve teaching technique categories identified in the studies. The most significant category in increasing student achievement was the use of wait-time after asking questions. Cognitive

outcomes, logical thinking, affect and critical thinking were increased by 0.91 standard deviations through appropriate use of wait-time. Categories which produced an increase in achievement greater than one-third of a standard deviation were: variation of levels of questioning strategies, teaching through hands-on activities, pre-instructional strategies of focusing and formative-diagnostic-feedback testing designed to promote mastery.

Contrary to widely perpetuated beliefs that use of so-called "funded" science curricula produced no advantage, empirical evidence strongly indicates otherwise. Lott (1983) and Anderson (1983) both found the implementation of the inquiry approach to teaching science to be effective in the elementary as well as the secondary school. In a landmark analysis of 105 experimental studies which involved over 45,000 students across 27 different funded science curricula, Shemansky, et al (1982), calculated effect sizes on the five student performance criteria of (1) achievement, process skills, analytical skills, related skills and attitudes toward science. Overall, students using the new curricula exceeded students using traditional curricula by thirteen percentile points. Achievement scores were raised fourteen percentile units when students were exposed to the funded programs across the elementary, junior high and high school levels. The highest elevation of achievement was 21 percentile points for females, 35 percentile points for low SES students and 29 percentile points for urban students.

Instructional systems are broad programs designed to

incorporate the various facets of teaching into an organizational structure. Both Mastery Learning and Personalized System of Instruction (PSI-Keller Plan) proved superior to other systems investigated through the meta-analysis of Willette, et al (1983). Their investigation of 130 studies indicated both Mastery Learning and PSI exceeded convential teaching by 0.64 standard deviations on all student outcomes. In contrast, students in both programs exceeded conventional instruction students by 0.50 standard deviations (SD) on cognitive measures, 0.52 SD on affect, 0.89 SD on critical thinking and 1.24 on science processes. Such recent innovations as team teaching, self-directed study, individualized instruction, audiotuturial instruction and computer assisted instruction indicated little student gain when compared to convential teaching approaches.

The preceding discussion, though not intended to be exhaustive, does provide considerable efficacy for selected teaching strategies, curricula and teaching systems in that meta-analysis research subsumes a considerable volume of evidence rather than citing one or two cases. Such data warrant consideration in the professionalization of teacher preparation programs.

No claim is made here as to the general applicability to all subject matter areas. Certainly such strategies as wait-time, varying questioning levels, pre-instructional set and systems such as Mastery Learning and PSI can be applied to enhance student gains in other subject-matter areas. What is suggested is that a substantial research base exists in a specific

subject-matter area. Findings in this, as well as other areas, need to be researched as to applicability across the disciplines and, if viable, applied to the general preparation of teachers. Of course, those identified as subject-matter specific should find application in their respective discipline areas. The important thing is that teacher preparation be based, in every respect possible, on research indicators.

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